

Date of Report: February 6, 1997
Date Received: February 4, 1997
Project: 80 S. Hudson Pit 2/4/97, PO #M73747
Date Samples Extracted: February 4, 1997
Date Extracts Analyzed: February 4, 1997

**RESULTS FROM THE ANALYSIS OF THE SOIL SAMPLE
FOR FINGERPRINT CHARACTERIZATION
BY CAPILLARY GAS CHROMATOGRAPHY
USING A FLAME IONIZATION DETECTOR (FID)
AND ELECTRON CAPTURE DETECTOR (ECD)**

Sample ID

M73747

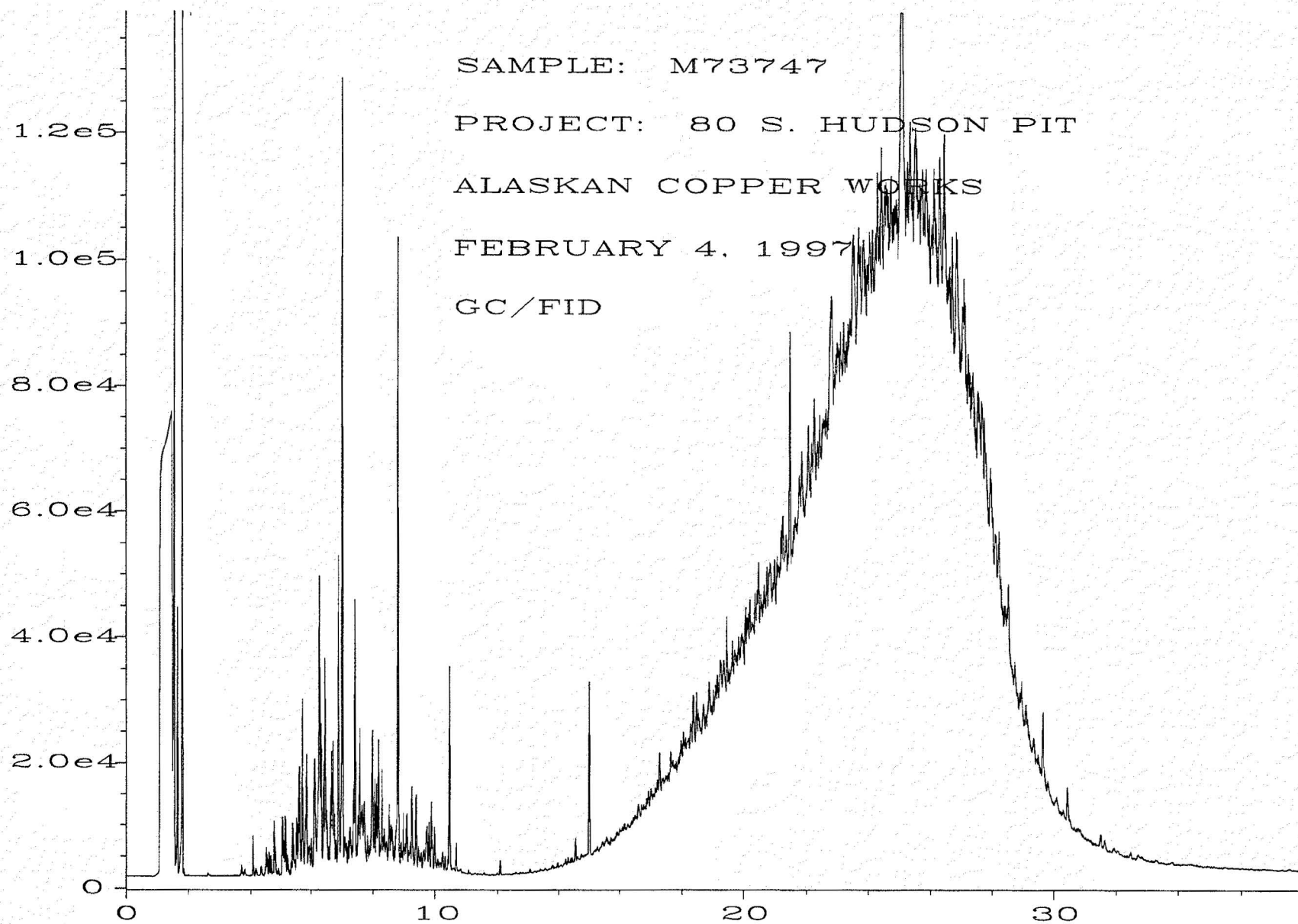
GC Characterization

The GC trace using the flame ionization detector (FID) showed the presence of low and high boiling compounds. The patterns displayed by these peaks are indicative of Stoddard solvent and lubricating oil.

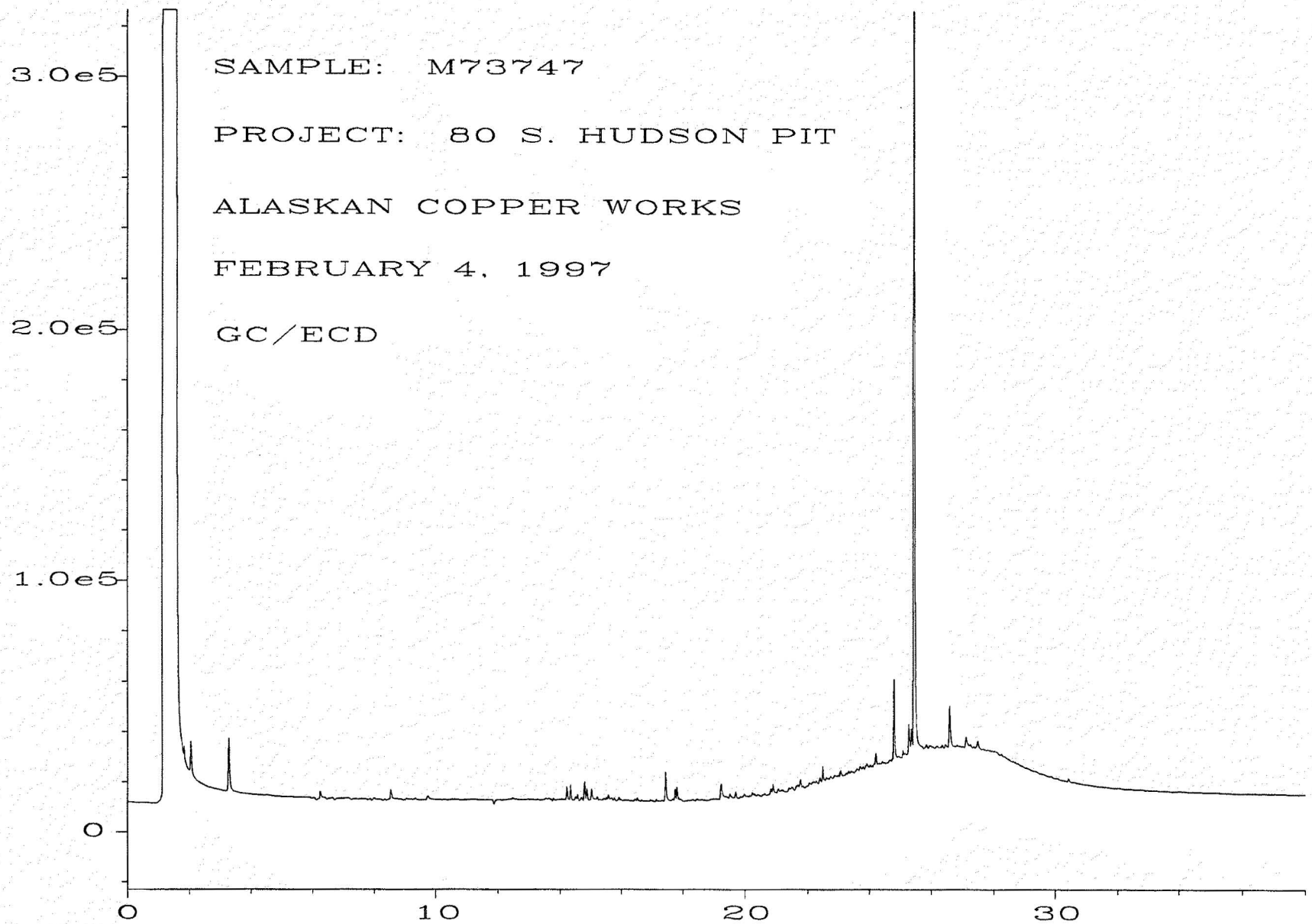
The low boiling compounds appeared as a regular pattern of peaks eluting from *n*-C₉ to *n*-C₁₂ showing a maximum near *n*-C₁₀.

The high boiling compounds appeared as a pattern of peaks eluting from *n*-C₁₅ to *n*-C₃₂ showing a maximum near *n*-C₂₆.

The large peak seen near 25 minutes on the GC/FID trace is pentacosane, added as a quality assurance check for this GC analysis. There is a second surrogate present that is seen on the GC/ECD trace at about 26 minutes which is dibutyl chlorendate.



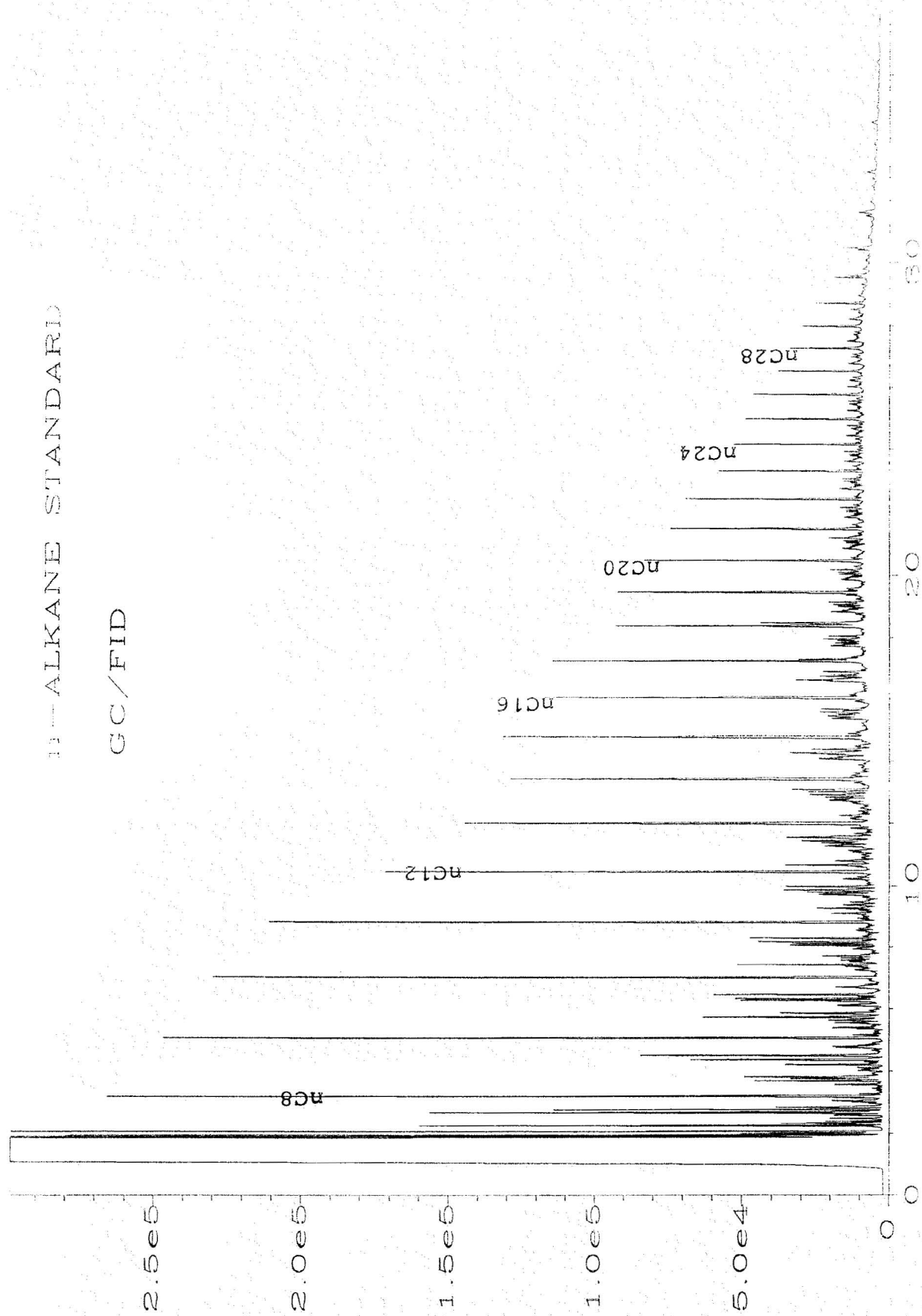
Sig. 1 in C:\HPCHEM\4\DATA\02-04-97\005F0401.D



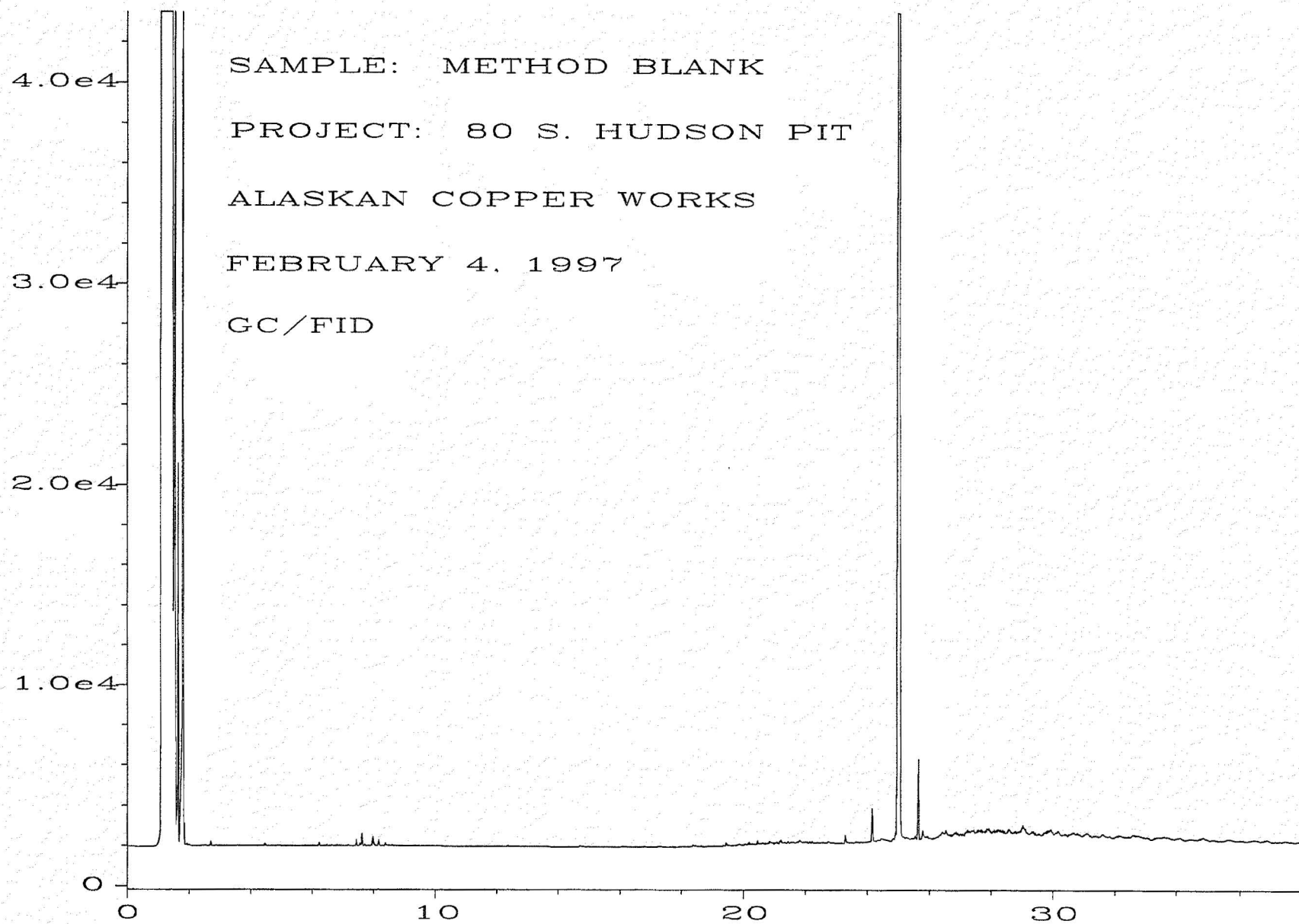
Sig. 2 in C:\HPCHEM\4\DATA\02-04-97\005R0401.D

11 - ALKANE STANDARD

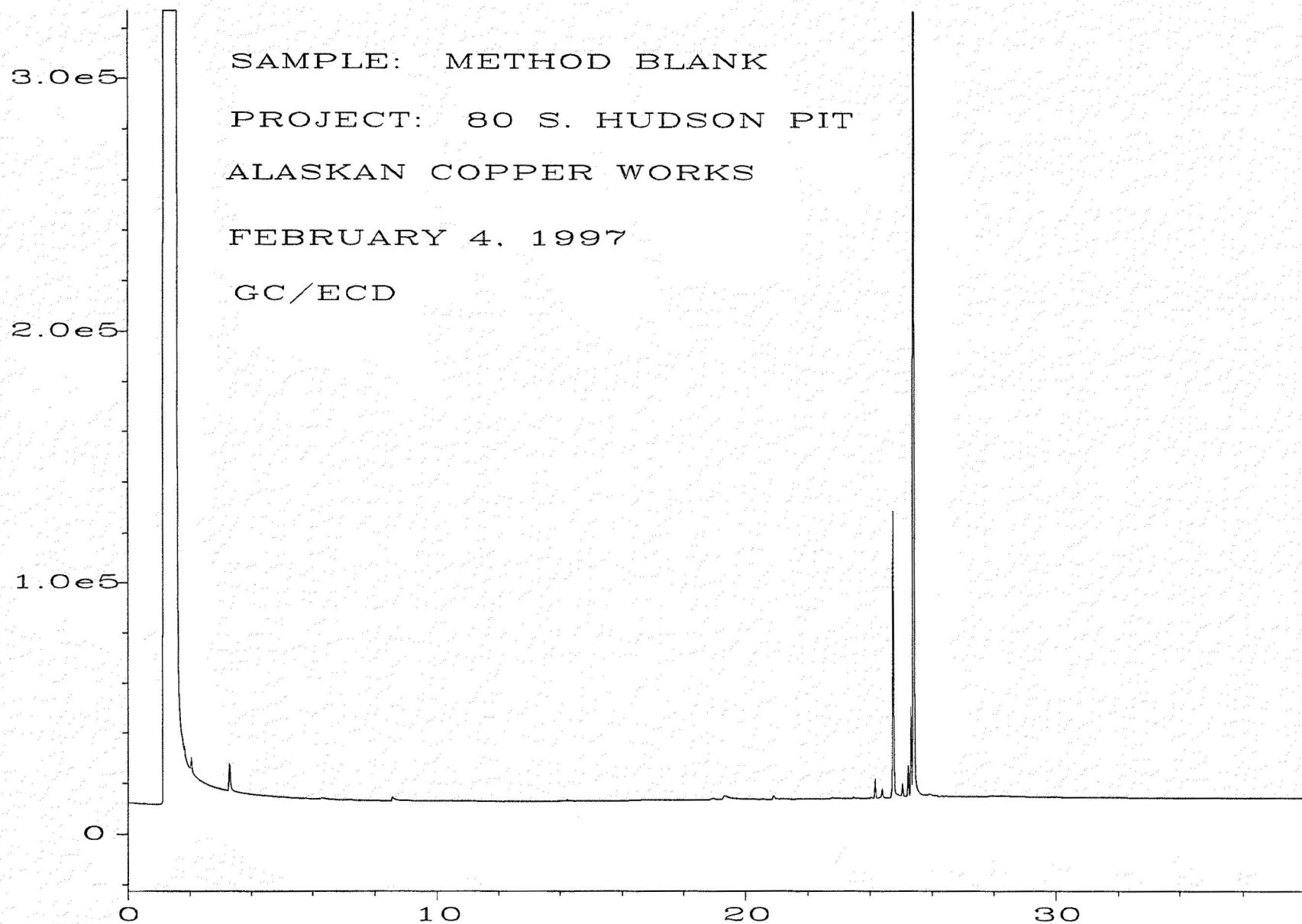
GC/FID



Sig: 1 in C:\HPCHEM\4\DATA\02-04-97\097F1504.D



Sig. 1 in C:\HPCHEM\4\DATA\02-04-97\006F1601.D



Sig. 2 in C:\HPCHEM\4\DATA\02-04-97\006R1601.D

N & BRUYA, INC.
Avenue West
98119-2029
282

KJ AO
02.04.97
1:14

SAMPLE CHAIN OF CUSTODY

To: Alaskan Copper Works Contact: GERALD A. Thompson
628 Hudson St
Zip: Seattle WA 98134
(206) 382-8379 Date: _____

PROJECT NAME

PURCHASE ORDER #

7238

80 S. Hudson Pit 2/4/97

m 73747

(signature)

PROJECT LOCATION

SAMPLE DISPOSAL INFORMATION

For Results 382-4309

CALL 7623-5800 X 569

- ☐ Dispose after 30 days
☒ Return Samples
☐ Call for Instructions

Sample #	Date/Time Sampled	Type of Sample	# of Jars	Lab Sample #	Analyses Requested
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m 73747

2/4/97 10:05

SOIL

1

75653

HFS

PRINT NAME

COMPANY

Date

Time

GERALD Thompson

A.C.W

2/4/97

1:08

KURT JOHNSON

FBI

2/4/97

1:08

09/19/94

AKC-0011711

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
Beth M. Albertson, M.S.
Bradley T. Benson
Kelley D. Wilt

3012 16th Avenue West
Seattle, WA 98119-2029
TEL: (206) 285-8282
FAX: (206) 283-5044

February 6, 1997

**INVOICE # 97ACU0206-1
DUPLICATE COPY**

Accounts Payable
Alaskan Copper Works
628 South Hanford
Seattle, WA 98134

RE: Project 80 S. Hudson Pit 2/4/97, PO #M73747: Results of testing requested
by Gerry Thompson, Project Manager for material submitted on February 4,
1997.

1 soil sample characterized by capillary
gas chromatography @ \$250 per sample

\$ 250.00

Amount Due

\$ 250.00

FEDERAL TAX ID #(b) (6)

FRIEDMAN & BRUYA, INC.

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February 6, 1997

Gerry Thompson, Project Manager
Alaskan Copper Works
628 South Hanford
Seattle, WA 98134

Dear Mr. Thompson:

Sample M73747 was submitted for hydrocarbon characterization. The majority of the material present in sample M73747 is a high boiling petroleum product similar to lubricating oil or transmission fluid. This material appears as a large hump between 15 and 33 minutes on the attached GC/FID trace. The GC/FID trace also shows a pattern of peaks between approximately 4 and 10 minutes. The pattern of these peaks is indicative of a Stoddard solvent.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.



Kurt Johnson
Chemist

keh
Enclosures
ACU0206R.DOC